


NUCLEONICA: Decay Engine

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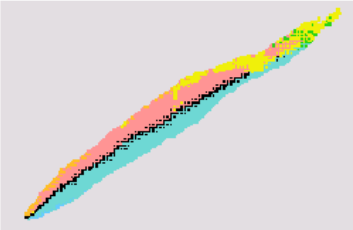
Nuclear science applications...



... web driven nuclear science


Applications My Preferences Help


> Nuclide Explorer



>> Actual Chart: Karlsruhe

> Search Nucleonica Documentation

 Nuclear Data Retrieval



> Application Centre

- >> ~~Mass Activity Calculator~~
- >> Decay Engine
- >> Dosimetry & Shielding
- >> Range & Stopping Power
- >> webKORIGEN
- >> Universal Nuclide Chart
- >> Transport & Packaging
- >> Nuclide mixtures
- >> Nucleonica Scripting
- >> Library creation for 3rd party software
- >> Radiological Dispersion Module
- >> Extended Graph Module

> Data Centre

- >> Physical Constants
- >> Nuclide Datasheets
- >> Nuclide Derived Data
- >> Average Cross Sections
- >> Radiations
- >> Prompt Gamma
- >> Fission Yields

> Knowledge Centre






- >> Nuclear News
- >> Reading room
- >> Useful Weblinks
- >> Ask An Expert
- >> Element Information
- >> Conference Calendar

Welcome, Joe






[Edit Preferences](#) [Administration](#)

MyCommunity Portal



> My Last Nuclides

-  90 Th232
-  90 Th231
-  94 Pu239
-  92 U235
-  25 Mn52






> My Nuclide Mixtures

-  Pu238+daughter (100g @50y)
-  Natural Uranium
-  Cs137 + Ba137m
-  U232+Co60
-  Transuranics in 1 ton Spent Fuel (4.2% enriched, 50GWd/t, 6 years cooling)

> My Sources


-  Pu239 1 g
-  natu

> My Messages

-  Thanks!
-  About my group and information
-  Photo Change
-  Open call for JRC Traineeships at the Institute for Transuranium Elements
-  NAML-9 International Conference on Nuclear Analytical Methods in the Life Sciences


>> View

> User Alerts

-  Task completed (DecayEngine: Uranium 238)

>> View

Dosimetry & Shielding:



... web driven nuclear science

ApplicationsMy PreferencesPrintHelp

Co60

10.47 m5.27 y

Decay Engine

27 Cobalt

Current Chart: Karlsruhe

Element: Mass:

Co60

Nuclide Mixtures Selector

Decay Engine

Options

Quantity:Grams1

Accuracy Factor:1E-02

Time:Years5.26E+01

Number of timesteps:10

Number of chains:

StartStart in backgroundReset

Type of graph:Numbers

DECAY ENGINE

Decay Engine

Options

Quantity: Grams

1

Accuracy Factor:

1E-02

Time: Years

5.26E+01

Number of timesteps: 20

Number of chains: 1

Start

Start in background

Reset

Show details

Create Nuclide Mixture

Parent+Daughters	Half-life	N(atoms)	M(g)	Ing.Radiot(Sv)
27 Co60	5.27 y	1.00E+19	9.95E-04	142
28 Ni60 Stable	stable	1.00E+22	9.99E-01	0
Total:		1.00E+22	1	142

Download

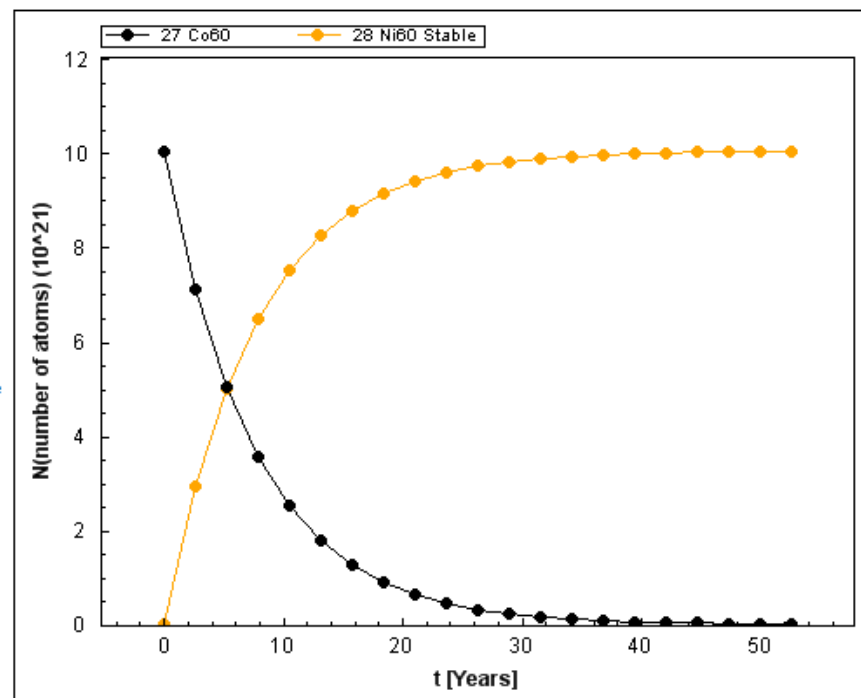


Separator:

Semicolon (;)

☒ Use field qualifier ("")

Type of graph: Numbers



- ☒ 27 Co60
☒ 28 Ni60 Stable
☐ Total:

Update

Exercises! Decay Engine

1. At $t=0$ there are 10 Ci of Sr-90. What will be the activity of Y-90 after 5 years?
2. What is the time required for the activity of Na-24 to diminish to 1% of its initial value?
3. What initial mass of F-18 is required in order that there are 3 mg remaining after 16 hours?

Exercises! Decay Engine

1. At $t=0$ there are 10 Ci of Sr-90. What will be the activity of Y-90 after 5 years? Ans. 8.87 Ci
2. What is the time required for the activity of Na-24 to diminish to 1% of its initial value? Ans. 4.13 d
3. What initial mass of F-18 is required in order that there are 3 mg remaining after 16 hours?(1.3g)

Thanks!



nucleonica

